

Sequence Listing

<110> CJ Corp.

5 <120> Gamma-Butyrobetaine hydroxylase originated from *Neurospora crassa*

<160> 4

<170> KopatentIn 1.71

10 <210> 1

<211> 1346

<212> DNA

<213> *Neurospora crassa*

15 <400> 1

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tacgctcctg accacgacaa gtacctcgca agagtcaaaa gacgacgaga aaacgagaag 120

20 ctggagtcgt ctcttcgcc aggtttccct cgaagactag actcggacct tgtgtgggac 180

ggcaacaccc tcgccgagac gtacgactgg acctacagac tgacagaaga ggccattgat 240

25 gaaatcgagg ccgcgcttcg tcattttaag agttagtaca gaatctctcc ttctgtcct 300

tgggcatcaa gccatcaact aaccatcacc gcatgacagg cctcaacaag cccctaggct 360

acatcaacca agaaaccttc cccctcccc gcctacacca cactctccgc tccctctccc 420

30 acgagctcca ccacggccac ggcttcaaag tcctccgcgg gctccccgtc acctcccata 480

cacgcgagga aaacatcatc atctacgccg gcgtctctc gcattgtcgt cctatccgcg 540

35 gccgccagga caaccagcac aacggccacc cagccgacgt agtcctagca cacatcaaag 600

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 aacaagtctt ccacaccgac gcaggcgaca tcgtcgccct cttttgcttg ggagaggccg 720
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 aagggaggaa gttttctgtg cgaccgcttt tgcattttca gtctactgct gctgctgctt 900
 10 ctagggaagc aaagcccgag tctgaacggc tcatcatcca gtacgccgc cgcacgttta 960
 cggggtattg gggattaccg aggtcggcgg atatcccgcc cattacggag gcgcaggcgg 1020
 15 aggcgttga tgcgctgcac ttacggcgg agaagtacgc ggtggcgtg gatttcaggc 1080
 agggggatgt ccagtttgtg aataactga gtgtgttcca ttcgagggcg gggtttagag 1140
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 20 gggagacgcc cgaggcgttg aaggaacggt gggaacgcgt gtatggcggg gtgagtccgg 1260
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<210> 2
 <211> 425
 30 <212> PRT
 <213> Neurospora crassa

<400> 2
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 35 1 5 10 15

Pro Asp Ile Gly Tyr Ala Pro Asp His Asp Lys Tyr Leu Ala Arg Val
 20 25 30

Lys Arg Arg Arg Glu Asn Glu Lys Leu Glu Ser Ser Leu Pro Pro Gly
 5 35 40 45

Phe Pro Arg Arg Leu Asp Ser Asp Leu Val Trp Asp Gly Asn Thr Leu
 50 55 60

10 Ala Glu Thr Tyr Asp Trp Thr Tyr Arg Leu Thr Glu Glu Ala Ile Asp
 65 70 75 80

Glu Ile Glu Ala Ala Leu Arg His Phe Lys Ser Leu Asn Lys Pro Leu
 85 90 95

15 Gly Tyr Ile Asn Gln Glu Thr Phe Pro Leu Pro Arg Leu His His Thr
 100 105 110

Leu Arg Ser Leu Ser His Glu Leu His His Gly His Gly Phe Lys Val
 20 115 120 125

Leu Arg Gly Leu Pro Val Thr Ser His Thr Arg Glu Glu Asn Ile Ile
 130 135 140

25 Ile Tyr Ala Gly Val Ser Ser His Val Ala Pro Ile Arg Gly Arg Gln
 145 150 155 160

Asp Asn Gln His Asn Gly His Pro Ala Asp Val Val Leu Ala His Ile
 165 170 175

30 Lys Asp Leu Ser Thr Thr Val Ser Asp Val Ser Lys Ile Gly Ala Pro
 180 185 190

Ala Tyr Thr Thr Glu Lys Gln Val Phe His Thr Asp Ala Gly Asp Ile
 35 195 200 205

Val Ala Leu Phe Cys Leu Gly Glu Ala Ala Glu Gly Gly Gln Ser Tyr
 210 215 220

Leu Ser Ser Ser Trp Lys Val Tyr Asn Glu Leu Ala Ala Thr Arg Pro
 5 225 230 235 240

Asp Leu Val Arg Thr Leu Ala Glu Pro Trp Val Ala Asp Glu Phe Gly
 245 250 255

10 Lys Glu Gly Arg Lys Phe Ser Val Arg Pro Leu Leu His Phe Gln Ser
 260 265 270

Thr Ala Ala Ala Ala Ser Arg Glu Ala Lys Pro Glu Ser Glu Arg Leu
 275 280 285

15 Ile Ile Gln Tyr Ala Arg Arg Thr Phe Thr Gly Tyr Trp Gly Leu Pro
 290 295 300

Arg Ser Ala Asp Ile Pro Pro Ile Thr Glu Ala Gln Ala Glu Ala Leu
 20 305 310 315 320

Asp Ala Leu His Phe Thr Ala Glu Lys Tyr Ala Val Ala Leu Asp Phe
 325 330 335

25 Arg Gln Gly Asp Val Gln Phe Val Asn Asn Leu Ser Val Phe His Ser
 340 345 350

Arg Ala Gly Phe Arg Asp Glu Gly Glu Lys Gln Arg His Leu Val Arg
 355 360 365

30 Leu Trp Leu Arg Asp Pro Glu Asn Ala Trp Glu Thr Pro Glu Ala Leu
 370 375 380

Lys Glu Arg Trp Glu Arg Val Tyr Gly Gly Val Ser Pro Glu Arg Glu
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Val Phe Pro Leu Glu Pro Gln Ile Arg Ser Ala Ser Lys Gly Glu Ser
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5 Val Gly Thr Gln Gly Gly Gly Gly Tyr
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<210> 3
 <211> 35
 10 <212> DNA
 <213> Artificial Sequence

<220>
 <223> primer for amplifying the gene of gamma-Butyrobetaine hydroxylase
 15 originated from Neurospora crass

<400> 3
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<210> 4
 <211> 31
 <212> DNA
 25 <213> Artificial Sequence

<220>
 <223> primer for amplifying the gene of gamma-Butyrobetaine hydroxylase
 30 originated from Neurospora crass

<400> 4
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